

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: October 29, 1996

Date Received: October 17, 1996

Project: Acid Tanks, PO #M54934

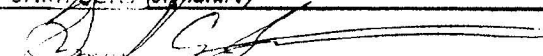
Date Extracts Analyzed: October 23, 1996

**RESULTS FROM THE ANALYSIS OF PRODUCT SAMPLES  
FOR IRON, CHROMIUM, COPPER, NICKEL, AND ZINC  
USING METHOD 6010  
Results Reported as mg/L (ppm)**



<u>Sample ID</u>	<u>Iron</u>	<u>Chromium</u>	<u>Copper</u>	<u>Nickel</u>	<u>Zinc</u>
M54934 A (small tank)	45,000	7,700	6,700	11,000	9
M54934 B (large tank)	43,000	9,300	750	7,900	29
Method Blank	<5	<5	<5	<5	<5

RNJ A.I.  
10.17.86  
11.15

Send Report To: Alaskan Copper Works Contact: Gerald Thompson  
Company: \_\_\_\_\_  
Address: 628 N. ALICE ST  
City, State: Seattle WA 98131  
Phone #: (206) 382-8579 Date: 10-17-86

SITE NO.	PROJECT NAME	PURCHASE ORDER #
7238	Acid Tanks	M 54834
SAMPLE (signature)	PROJECT LOCATION	
	3200 6th Ave S	
REMARKS	SAMPLE DISPOSAL INFORMATION	
	<input checked="checked" type="checkbox"/> Dispose after 30 days <input type="checkbox"/> Return Samples <input type="checkbox"/> Call for Instructions	

[illegible]

SIGNATURE	PRINT NAME	COMPANY	Date	Time
Relinquished by: 	GERALD Thompson	ACLU	10/17/96	10:28
Received by: 	Scott O'Gorman	F & B, Inc	10/17/96	10:30
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Beth M. Albertson, M.S.  
Bradley T. Benson  
Kelley D. Wilt

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044

November 5, 1996

Gerry Thompson, Project Manager  
Alaskan Copper Works  
628 South Hanford  
Seattle, WA 98134

Dear Mr. Thompson:

Enclosed are the amended results from the testing of material submitted on October 17, 1996 from your Acid Tanks, PO #M54934 project. The report has been amended to correct the result for sample M54934 A (small tank) for the Total Metals analysis.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Kurt Johnson  
Chemist

keh  
Enclosures  
ACU1029R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Date Received: October 17, 1996  
Project: Acid Tanks, PO #M54934  
Date Extracts Analyzed: October 23, 1996

**RESULTS FROM THE ANALYSIS OF PRODUCT SAMPLES  
FOR IRON, CHROMIUM, COPPER, NICKEL, AND ZINC  
USING METHOD 6010**

Results Reported as mg/L (ppm)

<u>Sample ID</u>	<u>Iron</u>	<u>Chromium</u>	<u>Copper</u>	<u>Nickel</u>	<u>Zinc</u>
M54934 A (small tank)	95,000	7,700	6,700	11,000	9
M54934 B (large tank)	43,000	9,300	750	7,900	29
Method Blank	<5	<5	<5	<5	<5

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

Date of Report: October 29, 1996

Date Received: October 17, 1996

Project: Acid Tanks, PO #M54934

### QUALITY ASSURANCE RESULTS FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Laboratory Code: 73401 (Duplicate)

Analyte:	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Chromium	mg/L (ppm)	<5	<5	nm	0-20
Copper	mg/L (ppm)	<5	<5	nm	0-20
Nickel	mg/L (ppm)	<5	<5	nm	0-20
Zinc	mg/L (ppm)	<5	<5	nm	0-20
Iron	mg/L (ppm)	12	11	9	0-20

Laboratory Code: Spike Blank

Analyte:	Reporting Units	Spike Level	% Recovery		Acceptance Criteria	Relative Percent Difference
			MS	MSD		
Chromium	mg/L (ppm)	5	99	97	80-120	2
Copper	mg/L (ppm)	5	92	92	80-120	0
Nickel	mg/L (ppm)	10	100	98	80-120	2
Zinc	mg/L (ppm)	5	103	101	80-120	2
Iron	mg/L (ppm)	10	105	104	80-120	1

nm- The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

a - The analyte was detected at a level less than five times the detection limit. The RPD results may not provide reliable information on the variability of the analysis.

**FRIEDMAN & BRUYA, INC.**

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**ENVIRONMENTAL CHEMISTS**

Date of Report: October 29, 1996  
Date Received: October 17, 1996  
Project: Acid Tanks, PO #M54934  
Date Extracts Analyzed: October 28, 1996

**RESULTS FROM THE ANALYSIS OF PROCESS WATER SAMPLES  
FOR SPECIFIC GRAVITY @ 15.56 °C**

<u>Sample ID</u>	<u>Specific Gravity</u>
M54934 A (small tank)	1.22
M54934 B (large tank)	1.22

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

**Date of Report: October 29, 1996**

**Date Received: October 17, 1996**

**Project: Acid Tanks, PO #M54934**

**QUALITY ASSURANCE RESULTS  
FOR SPECIFIC GRAVITY**

**Laboratory Code: 73403 (Duplicate)**

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>Relative Percent Difference</u>
Specific Gravity	@ 15.56°C	1.22	1.22	0

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: October 29, 1996  
Date Received: October 17, 1996  
Project: Acid Tanks, PO #M54934  
Date Extracts Analyzed: October 28, 1996

**RESULTS FROM THE ANALYSIS  
OF PROCESS WATER SAMPLES  
FOR % ACID BY VOLUME**

<u>Sample ID</u>	<u>% Acid</u>
M54934 A (small tank)	9.3
M54934 B (large tank)	11

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

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**QUALITY ASSURANCE RESULTS  
FOR % ACID BY VOLUME**

Laboratory Code: 73403 (Duplicate)

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>Relative Percent Difference</u>
Acid	% by Volume	11	11	0



**FRIEDMAN & BRUYA, INC.**

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Kelley D. Wilt

3012 16th Avenue West  
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TEL: (206) 285-8282  
FAX: (206) 283-5044

October 29, 1996

**INVOICE # 96ACU1029-1  
DUPLICATE COPY**

Accounts Payable  
Alaskan Copper Works  
628 South Hanford  
Seattle, WA 98134

RE: Project Acid Tanks, PO #M54934: Results of testing requested by Gerry Thompson, Project Manager for material submitted on October 17, 1996.

2 product samples analyzed for Iron, Chromium, Copper, Nickel, and Zinc using Method 6010 @ \$75 per sample	\$ 150.00
2 process water samples analyzed for Specific Gravity @ \$25 per sample	50.00
2 process water samples analyzed for % Acid by Volume @ \$25 per sample	<u>50.00</u>
Amount Due .....	\$ 250.00

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628 South Hanford  
Seattle, WA 98134

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